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## ABSTRACT

The invention provides methods of protecting solid-state proteins from the effects of ionizing radiation which comprise combining the protein with a radiationprotecting amount of a methoxysalicylaldehyde derivative, preferably 3methoxysalicylaldehyde; radiation-protecting amounts of a methoxysalicylaldehyde preferably 3-methoxysalicylaldehyde, and derivative. 6-hydroxy-25,7,8tetramethylchroman-2-carboxylic acid; or radiation-protecting amounts of a methoxysalicylaldehyde derivative, preferably 3-methoxysalicylaldehyde and isopropanol, prior to exposing the protein to ionizing radiation.

The invention further provides radiation-resistant pharmaceutical formulations comprising a protein and a methoxysalicylaldehyde derivative, preferably 3methoxysalicylaldehyde; a protein and a combination of a methoxysalicylaldehyde derivative. preferably 3-methoxysalicylaldehyde, and 6-hvdroxv-2.5.7.8tetramethylchroman-2-carboxylic acid; or a protein and a combination of a methoxysalicylaldehyde derivative, preferably 3-methoxysalicylaldehyde and isonronanol

The invention still further provides a composition comprising a combination of a methoxysalicylaldehyde derivative, preferably 3-methoxysalicylaldehyde, and 6hydroxy-2.5.7.8-tetramethylchroman-2-carboxylic acid, and for the use of such composition in pharmaceutical formulations as a radioprotectant.